AMENDMENTS TO THE CLAIMS

Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) An axially restrained-shrunk catheter balloon.

2. (Original) The catheter balloon of claim 1wherein the balloon is a compliant or semi-compliant catheter balloon.

3. (Original) The catheter balloon of claim 1 having a predetermined compliance curve chat is attained at least in part by the axially restrained shrinkage of the balloon.

4. (Original) The catheter balloon of claim 3 wherein the predetermined compliance is a non-linear compliance curve.

5. (Original) The catheter balloon of claim 1 wherein the balloon comprises a crosslinked polymer or a polymer with shrink memory.

6. (Original) The catheter balloon of claim 4 wherein the crosslinked polymer is crosslinked with a chemical crosslinker or wherein the crosslinked polymer is crosslinked using radiation.

7. (Original) The catheter balloon of claim 4 wherein the polymer with shrink memory comprises a stretch-oriented polymer.

8. (Original) The catheter balloon of claim 1 wherein the balloon is further coupled to a tubular element.

9. (Original) The catheter balloon of claim 8 wherein the balloon is welded to the tubular element.

10. (Original) The catheter balloon of claim 8 wherein the balloon has a balloon outer diameter and wherein the tubular element has a tubular element outer diameter, and wherein the balloon outer diameter and the tubular element outer diameter are the same.

11. (Original) A catheter balloon having a predetermined compliance curve that is attained at least in part by axially restrained shrinkage of the balloon.

12. (Original) The. catheter balloon of claim 11 wherein the balloon has a wall length that remains the same or increases upon axially restrained shrinkage.

13. (Original) The catheter balloon of claim 11 wherein the compliance curve is a non-linear compliance curve.

14. (Original) The catheter balloon of claim 11 wherein the compliance curve has a reduced increase of diameter in a range of 14 atm to 20 atm as compared to a comparable catheter balloon that is produced without axially restrained shrinkage.

15. (Original) The catheter balloon of claim 11 wherein the balloon is a compliant or semi-compliant catheter balloon.

16. (Original) The catheter balloon of claim 11 wherein the balloon has an axial front end and an axial back end, and wherein axial restrained shrinkage is achieved by maintaining a distance between the front end and back end . relative to each other.

17. (Original) The catheter balloon of claim 11 wherein the balloon has an axial front end and an axial back end, and wherein axial restrained shrinkage is achieved by increasing a distance between the front end and back end relative to each other.

18. (Original) The catheter balloon of claim 11 wherein the balloon comprises a crosslinked polymer or a polymer with shrink memory.

19. (Original) The catheter balloon of claim 11 wherein the balloon is coupled to a wire-guided catheter.

20. (Original) A compliant or semi-compliant catheter balloon for inflation to a pressure of between P_1 and P_2, wherein the balloon is formed from a polymer that is crosslinked such that the balloon has a reduced compliance in a pressure range of 70% of P_2 up to P_2.

21. (Original) The catheter balloon of claim 20 wherein the balloon is further heat treated under axial restraint to form the compliant or semi-compliant catheter balloon.

22. (Original) The catheter balloon of claim 21 wherein the polymer comprises a polyamide/polyether polyester.

23 (Canceled)

24. (Presently Amended) The catheter balloon of claim ~~21~~ 22 wherein the polyamide/polyether polyester is crosslinked using radiation.

25. (Original) The catheter balloon of claim 20 wherein P_1 is 1 atm and P_2 is 20 atm.

26 -34. (Canceled)

35 . (Presently Amended) A catheter comprising the catheter balloon of claim 1, wherein the catheter has an outer lumen diameter and wherein the catheter balloon has an outer diameter that is equal to or less than ~~that~~ the catheter outer lumen diameter.

36. (Presently Amended) A catheter comprising the catheter balloon of claim 11, wherein the catheter has an outer lumen diameter and wherein the catheter balloon has an outer diameter that is equal to or less than ~~that~~ the catheter outer lumen diameter.

37. (New) A catheter comprising the catheter balloon of claim 1, wherein the catheter has an outer lumen of a given diameter and wherein the catheter balloon has an outer diameter that is equal to or greater than the catheter outer lumen diameter.

38. (New) A catheter comprising the catheter balloon of claim 11, wherein the catheter has an outer lumen diameter and wherein the catheter balloon has an outer diameter that is equal to or greater than the catheter outer lumen diameter.

39. (New) A catheter balloon produced by a process comprising:

forming a balloon from a polymer material, and

heating the balloon while axially restraining and thereby radially shrinking the balloon.

40. (New) A catheter comprising the catheter balloon of claim 39, wherein the catheter has an outer lumen diameter and wherein the catheter balloon has an outer diameter that is equal to or less than the catheter outer lumen diameter.

41. (New) A catheter comprising the catheter balloon of claim 39, wherein the catheter has an outer lumen diameter and wherein the catheter balloon has an outer diameter that is equal to or greater than the catheter outer lumen diameter.

42. (New) A catheter comprising a catheter balloon according to claim 1, wherein the restrained-shrink balloon has a reduced profile and the reduced profile is obtained without requiring the wrapping of the shrunk catheter balloon element about itself.

43. (New) A catheter comprising a catheter balloon according to claim 11, wherein the restrained-shrink balloon has a reduced profile and the reduced profile is obtained without requiring the wrapping of the shrunk catheter balloon element about itself.

44. (New) A catheter comprising a catheter balloon according to claim 39, wherein the restrained-shrink balloon has a reduced profile and the reduced profile is obtained without requiring the wrapping of the shrunk catheter balloon element about itself.

45. (New) The catheter balloon of claim 1, having a reduced profile and comprising an expandable portion and a less expandable portion.

46. (New) The catheter balloon of claim 45, wherein the expandable portion is between two less expandable portions.

46. (New) The catheter balloon of claim 1, wherein an outer diameter of an expandable portion is a value between an outer diameter of a corresponding unshrunken balloon and an outer diameter of the tube from which it is formed.

47. (New) The catheter balloon of claim 45, joined to a catheter to comprise a medical dilatation device.